



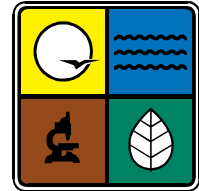
Missouri Department of Natural Resources

Formerly Utilized Sites Remedial Action Program (FUSRAP)

Oversight and Monitoring Grant

Quarterly Report:

July 1, 2005 – September 30, 2005



Ballfield Hot Spot Removal August 9, 2005

Contaminated soil was removed this quarter from an area across from the St. Louis Airport Site (SLAPS), which is commonly known as the Ballfields area. As there was significant rain showers during this time period, the U.S. Army Corps of Engineers (USACE) took precautionary measures to ensure erosion and soil runoff did not occur by placing plastic sheeting over disturbed areas and maintained erosion control measures. This was critical at this location because Coldwater Creek is located directly behind the excavator shown in the picture above.

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MISSOURI DEPARTMENT OF NATURAL RESOURCES

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HISTORY OF THE FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM (FUSRAP) SITES

The St. Louis Downtown Site (SLDS) processed uranium for the nation's early atomic energy program. In 1946, the U. S. Department of Energy's (DOE) predecessor agencies began utilizing the St. Louis Airport Site (SLAPS) as a storage area for radioactive wastes and processed residues, the majority of which originated at the SLDS. Methods of storage at the SLAPS included both uncovered bulk storage piles and materials containerized in drums. In 1966, the materials at the SLAPS were sold by the Atomic Energy Commission (AEC) and were shipped to a facility at 9200 Latty Avenue, where the majority of the material was dried and shipped to out-of-state processing facilities. In 1973, 8,700 tons of radioactively contaminated barium sulfate processed waste was mixed with 39,000 tons of soil and illegally disposed at West Lake Landfill. (West Lake Landfill is being handled with separately from the Formerly Utilized Sites Remedial Action Program (FUSRAP)).

Processing, transportation, storage, and management practices during the above stated period, led to the contamination of the three major FUSRAP sites: SLDS, SLAPS, and the Hazelwood Interim Storage Site (HISS), with the latter two sites being placed on the National Priorities List (NPL) in 1989. In addition, approximately 78 contaminated vicinity properties have been identified as the St. Louis Airport Site Vicinity Properties (VP's). The total estimated volumes of contaminated soils, sediments, and debris are in the range of 700,000 cubic yards.

On October 13, 1997, the 1998 Energy & Water Appropriations Bill transferred the responsibility for FUSRAP from the DOE to the USACE.



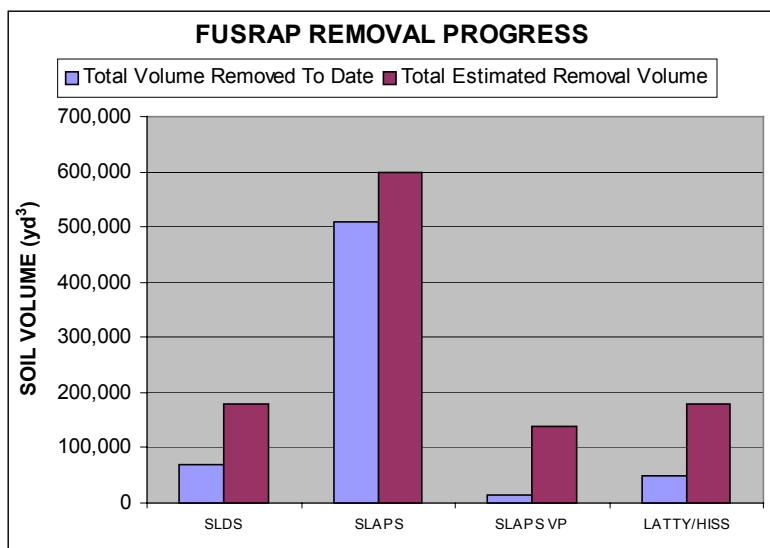
Haul Road Sampling

In August, department staff conducted soil sampling on the side of roads, which were suspected to have been used to transport radiological residue from one of four sites in the St. Louis area from 1946 to 1973. The sampling in the picture above was located on St. Charles Rock Road near Bridgeton Landfill.

STATUS OF WORK

WORK COMPLETED PRIOR TO THIS QUARTER.

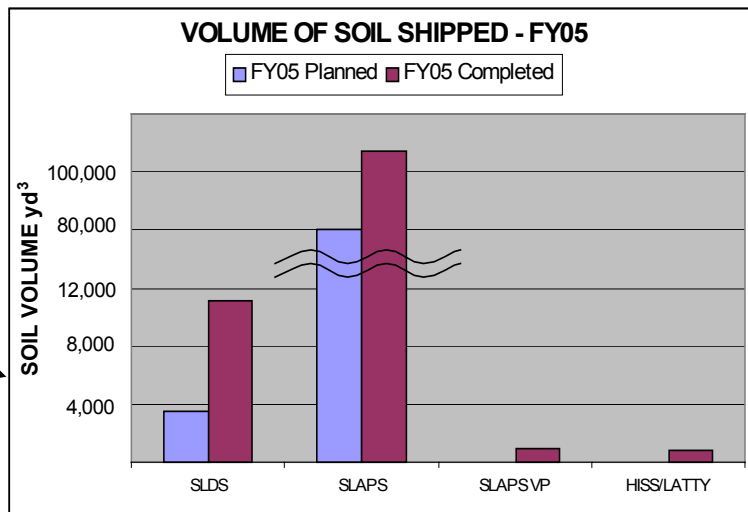
MAJOR AREA	SPECIFIC SITE	WORK DESCRIPTION (Note: Volumes were borrowed from the USACE Oversight Committee Briefings.)
NORTH COUNTY (NC)	SLAPS	Removal actions in Phase 4 and 5 continued. Approximately 51,000 cubic yards were shipped during this quarter. There was a 65,000 cubic yards total for FY05 (85,000 is planned for FY05).
	HISS/Latty	There was no contamination removal at these sites during this time.
	Vicinity Properties (VPs)	Contamination removal at VP2(L) was conducted to assist the owner with property improvement projects.
ST. LOUIS DOWNTOWN SITE (SLDS)	Mallinckrodt Inc.	Remedial actions at SLDS Plant 7N/7S continued through this time.
	Vicinity Properties (VPs)	No remedial actions took place this quarter at the VP's.
	General	5,700 cubic yards have been shipped for 2005. (2,700 cubic yards this quarter.)



This graph shows the total volume of soil that has been removed at FUSRAP, from the start of the program through the end of FY05. The graph shows a comparison to the total volume of soil that the USACE estimates will be removed when the cleanup project is completed.

This graph shows the volume of soil removed this 2005 fiscal year versus what the USACE had planned. Although removal work was conducted at SLAPS VP, and HISS/LATTY sites, no soil was originally planned for removal.

Note: Shipping volumes were acquired from the USACE FUSRAP Oversight Meeting.



STATUS OF WORK
WORK COMPLETED THIS QUARTER
(July 1 through September 30, 2005, approx.)

MAJOR AREA	SPECIFIC SITE	WORK DESCRIPTION (Note: Volumes were borrowed from the USACE Oversight Committee Briefings.)
NORTH COUNTY (NC)	SLAPS	Removal activities were completed this quarter for Phase 4 & 5. Removal activities continued in Phase 6 along the Norfolk Southern Railroad. Excavation of soil at SU's 49, 50, 51, & 52, occurred in Phase 6.
	HISS/Latty	No removal activities were conducted at the HISS/Latty sites.
	Vicinity Properties (VPs)	Excavation of a hot spot in the Ballfields area across from the SLAPS site was started and completed this quarter.
	Documents Reviewed this Quarter	Pre-Design Investigation Work Plan for the Hazelwood Interim Storage Site and FUTURA; Pre-Design Investigation Report for FUSRAP SLAPS VP-08(C) & Latty Avenue VP -01(L), & VP-40a Parcel
	Documents Finalized this Quarter	VP-2(L) Building Roof Remediation Final Status Survey Evaluation Report, Record of Decision for the North St. Louis County Sites, Final
ST. LOUIS DOWNTOWN SITE (SLDS)	Mallinckrodt Inc.	Remedial actions at SLDS Plant 7N continued through this quarter. Excavation started at the Plant 6W Rail Spur in August.
	Vicinity Properties (VPs)	No remedial actions took place at SLDS VP's this quarter
	General	This quarter 6,756 cubic yards have been shipped from SLDS.
	Documents Reviewed this Quarter	Post-Remedial Action Report for the Assessable soils at Midtown Garage (DT-29); Mallinckrodt Inc. Property Sewer Study – Phase 1.
	Documents Finalized This Quarter	Residual Dose and Risk Assessment for Plant 10 SLDS; Amendment 3 (add. sampling for plant 7W) to PDI report, Plants 6 WH and 7W SLDS.



Plant 7N Area 2A – Excavation in Plant 7N continued through the 3rd quarter. In some of these areas soil was removed at depths of 7 feet or more.

WORK PERFORMED BY DEPARTMENT PERSONNEL THIS QUARTER

DOCUMENT REVIEW

The department's Federal Facilities Section (FFS) provides technical review on major decision documents, work plans, pre-design investigation reports, and post remedial action reports.

Comments are submitted to the USACE for response and become part of the public record. Listed below are the documents reviewed by the department during this quarter and a summary of comments submitted.

1. *Mallinckrodt Inc. Property Sewer Study – Phase 1*

- The department asked for more information in the document explaining how the purpose of the Phase 1 study relates to Record of Decision (ROD) and what type of remedial actions or decisions will be made based on the conclusion of the Phase 1 study.
- We have recommended that all eight of the proposed sampling locations be sampled, due to the variability in manhole design and variability in the settling potential of contaminants at each manhole. However, the department suggested that if the intent of this study is to determine what impact the sewer system may have had on the subsurface soils and groundwater at the site, additional sampling of all manholes and many piping runs should be evaluated to determine where breaks and leaks have occurred.
- Mallinckrodt and/or others are encouraged to provide any additional information or corrections that would be helpful in the completion of the sewer study.

2. *Pre-Design Investigation Work Plan for Hazelwood Interim Storage Site and FUTURA*

The department has concerns regarding what appeared to be the lack of characterization under the actual footprint of the prior soil mound at HISS. The USACE responded to the department's comment by explaining that the extent of contamination in this area is somewhat uniformly distributed both horizontally and vertically.

3. *Pre-Design Investigation Summary Report for the FUSRAP St. Louis Airport Site Vicinity Property (VP)-08(C) & Latty Avenue Properties VP-01(L), & VP-40a Parcel*

- Department staff, during a site visit on October 6, 2005, recognized that a stormwater collection system at VP-01(L) (roof drains, downspouts, sumps and piping) in certain cases appear to correspond with known contaminated areas. The department suggested that this system be shown on the layout map and recommended further investigation in the form of additional bias sampling at suspect locations.
- Department staff requested whether the commercial building at VP-01(L), which was present during the time when radiological material was dispersed, would be investigated for surficial contamination on the structure itself (roof, structure, ventilation system, etc.).
- It was also suggested that additional utilities be shown on the layout maps to aid in determining potential paths of contamination.

4. *Post-Remedial Action Report for the Assessable soils at Midtown Garage (DT-29).*

The document review resulted in no questions or concerns.

SITE OBSERVATIONS

Field personnel conduct site visits to observe and document the status of remedial actions, environmental monitoring, contaminant migration prevention, and pre-design investigations. USACE personnel are immediately notified of findings and reports are filed for public record.* The following site visits were conducted on these dates during this quarter:

- **SLAPS:**

August	3, 25
September	6
- **SLAPS VPs**

August	11, 15, 17, 30
September	16, 23, 26, 27, 28
- **SLDS:**

July	6, 7, 19, 27
August	10, 24
September	7

**All departmental comments and site visit reports are available upon request.*

SAMPLING

Independent sampling is continuing on discharges to Coldwater Creek, flows of Coldwater Creek, soil in removal areas, and soil and surficial dust at areas of interest. The following is a list of samples taken this quarter.

North St. Louis County Haul Road Soil Samples

- A random soil sampling project was conducted on suspect haul roads in the North County area. On August 17, 2005, samples VPSCR081705SL01 through VPSCR081705SL20, and VPSCR081705SL0A through VPSCR081705SL0T, were collected along St. Charles Rock Road.
 - Parameters for analysis include: Th-228, Th-230, Th-232, Ra-226, U-234, U-235, U-238, Total U (computed). A summary of the results is discussed below in Site Activities section. Detailed results are available upon request.
- On September 27-28, 2005, a 2nd random soil sampling project was conducted on suspect haul roads in the North County area. Samples VPBR092705SL01 through VPBR092705SL20, and VPTR092805SL0A through VPTR092805SL0T, were collected along Boenker Road and Taussig Road near Bridgeton Landfill.
 - Parameters for analysis include: Th-228, Th-230, Th-232, Ra-226, U-234, U-235, U-238, Total U (computed). Results will be available at a later date and can be supplied upon request.

St. Louis Downtown Site Haul Road Soil Samples

- Three Bias soil samples (VPMR092805SL*, VPMR092805SL**, VPMR092805SL***) were collected from along Mallinckrodt St. and Salisbury St., just East of Interstate-70.
 - Parameters for analysis include: Th-228, Th-230, Th-232, Ra-226, U-234, U-235, U-238, Total U (computed). Results will be available at a later date and can be supplied upon request.

Coldwater Creek Surface Water Samples

- Surface water samples (SLA090605CWCWA, SLA090605CWCWB, SLA090605CWCWC, and SLA090605CWCWX) were collected from Coldwater Creek on September 6, 2005. The

sampling event consisted of one sample upstream from SLAPS and three samples adjacent to and downstream from the SLAPS site.

- Parameters for analysis include: As, Cu, Cd, Mn, Se, Th-228, Th-230, Th-232, Ra-226, Ra-228, U-234, U-235, U-238, Gross Alpha, and Gross Beta.

SERVICES PERFORMED BY THE DEPARTMENT'S DIVISION OF GEOLOGY AND LAND SURVEY (DGLS)

This division provides support to the FFS by commenting on groundwater issues, potential migration of contaminants, and other matters requiring the knowledge and skills of staff familiar with Missouri's geologic formations. In addition, they also provide site construction oversight services and technical support.

COMMUNITY RELATIONS

Department personnel are available for questions, requests for information, or as a means of submitting comments and concerns. It is the department's goal to encourage community involvement and ensure the concerns of the citizens of Missouri are addressed. If you need assistance, please contact Ramona Huckstep, the Community Involvement Coordinator, at (573) 522-1540.

BIWEEKLY REGULATORS COORDINATION MEETINGS

In the past, every two weeks, personnel from the U.S. Environmental Protection Agency (EPA), the USACE, Mallinckrodt/Tyco, and the department, would meet in person and by conference call to discuss site status, document schedules, landowner assistance projects, and other similar issues. These coordination meetings are very beneficial as they keep the parties informed of site status, allow for discussion of cleanup issues and provide coordination of agency activities as they relate to cleanup of the sites. During this reporting period, these calls have not been held due to staff shortages at the USACE. We understand that the scheduling of these meetings will resume in October 2005.

COMMENTS REGARDING SITE ACTIVITIES THIS QUARTER

NON-SITE SPECIFIC

- *US DOT Transportation Exemption* – The USACE's request for exemptions to current US DOT transportation regulations was granted. The request was made as a result of changes in the regulations, by the US DOT, to make them more closely match international standards. Approval of the exemption allows the USACE to continue using current shipping methods. (Soil and debris is wrapped inside a plastic liner that sits inside an open top railcar gondola.)

NORTH COUNTY

- *Record of Decision* – The Record of Decision (ROD) for the North St. Louis County Sites was signed by the EPA and USACE on September 2, 2005. The following position statement was provided by the department to the USACE in a letter dated July 21, 2005, from Director Doyle Childers to Colonel Lewis F. Setliff, III, St. Louis District Commander:
"The Missouri Department of Natural Resources prefers alternative 6 as the selected remedy as it does not require institutional controls (ICs) and long-term monitoring. However, the department recognizes it is not practical or cost effective to remove all contamination at this

time. Therefore, the department supports the USACE's selected remedy, alternative 5, if the federal government can ensure the implementation of IC's and a commitment for fully funding an enforceable and robust long-term stewardship at the FUSRAP sites. The department stands ready to partner with the USACE, the EPA, and the local stakeholders on the development of ICs and a Long Term Stewardship plan. To achieve adequate stewardship, the State must be included as an equal party in an amended Federal Facility Agreement (FFA). Therefore, the department gives concurrence with this remedy under the condition that the FFA will be amended, with the State as a signatory agent, concurrent with or prior to the finalization of the stewardship plan."

SLAPS

- *Phase 6 Remediation* - The USACE continued removal of contaminated soils from the Phase 6 area. Phase 6, the final phase, is a strip of area along the Southern boundary of SLAPS along the rail line and Banshee Road. The USACE'S railspur, which was located in Phase 6, has been moved to a clean area on SLAPS and will be used for shipping soils removed from various nearby properties. This will include a paved pad for stockpiling soils and a detention basin for collecting stormwater runoff.
- *Ballfields "Hotspot" Removal* – The USACE removed 950 cubic yards of contaminated soil from the area commonly known as the Ballfields property. The hotspot was located along the bank of Coldwater Creek, just North of the SLAPS site. Department staff conducted site visits during remediation to check that appropriate erosion control practices were in place. Site visit reports are available upon request.

HISS

- There was no activity at HISS this quarter.

NORTH COUNTY VICINITY PROPERTIES

- *Haul Road Sampling* – Contamination along roadways exists at the North County Sites due to the loss of radioactive material from uncovered dump trucks. Trucks hauled the residues to and from one of four sites that handled the residue from the Uranium operation at the Mallinckrodt Chemical Works. Three different hauling events took place in the North County area that contributed to the contamination along effected roads. Beginning in 1946, the residue from Mallinckrodt's operation was trucked to a piece of land now known as the SLAPS. In 1966, this residue material was moved by way of dump trucks from SLAPS to a site now know as the HISS, on Latty Avenue just east of Coldwater Creek. And finally in 1973, the remaining residue material at the HISS site was trucked to West Lake Landfill, which is located adjacent to the Bridgeton Landfill on St. Charles Rock Rd. After a historical review of highways in the area, department staff obtained soil samples along the side of roadways that were most likely used as a haul route during that time. The roadways that were sampled were also outside the boundary of previously investigated roads. The roads selected for sampling included a section of St. Charles Rock Road, Taussig Road, and Boenker Road. These roads most likely used as haul routes from the HISS site to the West Lake Landfill. Once the analytical data is received, the department plans to prepare a draft report containing the results and explanation of the findings. A summary of the results will be presented in next quarter's report.

ST. LOUIS DOWNTOWN SITE

- *Plant 7N/7S Remedial Action* - The USACE conducted remedial actions at Plant 7N/7S at the Mallinckrodt Chemical Plant. 12,456 cubic yards of soil have been removed from these

areas to date. Department staff provided site visits during removal actions and attended contractor coordination and preparatory meetings.

TASKS AND GOALS FOR NEXT QUARTER

NORTH COUNTY SITES

- *Public Availability Session on North County Record of Decision* – The USACE has tentatively scheduled a public availability session on the North County ROD for November 10, 2005 from 3:00 – 6:30 pm. Both USACE and MDNR staff will be available at this session to answer questions regarding the recently signed ROD.
- *Vegetation sampling* – The USACE plans to sample trees and shrubs along affected areas of Coldwater Creek. Vegetative material has the potential of up-taking Uranium along with water and nutrients if Uranium is present in the soil around the root systems. In the past, the USACE has disposed of the trees in known contaminated areas as if they were contaminated also. In order to save space in the gondola railcars, vegetation will be sampled along Coldwater Creek to determine if trees and other woody plants have been contaminated with radiological material. This sampling event has not been scheduled, but is anticipated in near future.
- *HISS & Futura Investigation Sampling* – In order to further define the contamination areas around the Hazelwood Interim Storage Site, the USACE will be conducting additional sampling as proposed in the draft Pre-Design Investigation Work Plan. The department will conduct a site visit when this sampling event occurs.
- *North County Long-Term Stewardship Plan* – The recently signed ROD stipulates that a draft Long-Term Stewardship Plan be developed by the USACE, and submitted to the EPA and the department for review, by January 2007. The department plans to be an active participant in the development of the plan.

ST. LOUIS DOWNTOWN SITE

- Excavation will continue at SLDS Plant 7N/7S next quarter.

DOCUMENT REVIEW

Review of the following documents and data are tentatively planned during the next quarter:

- Final Status Survey Evaluation for the Accessible Soils Within the St. Louis Downtown Site Vicinity Properties West of Broadway, Mallinckrodt Plants 3, 8, 9, 11, and Parking Lots
- St. Louis North County Vicinity Properties Status Report

SITE OBSERVATIONS AND SAMPLING

- Observe work on Phase 6 at SLAPS and North County VP's if initiated.
- Observe completion of work at Plant 7N and 7S at SLDS.
- Be prepared to sample whatever discharges might occur from surprise or unexpected flooding during rain events.
- Visit North County and Downtown vicinity properties to document property changes/developments and verify they contacted the USACE for assistance.
- Continue monitoring Coldwater Creek by sampling up and downstream of the SLAPS and HISS.

- Participate in weekly coordination meetings with the EPA and the USACE.
- Respond to public requests and/or concerns, especially those requiring fieldwork.
- Provide notification to the USACE regarding questions and concerns the department may have.
- Provide documentation of findings to all interested persons.

COMMUNITY RELATIONS

- Electronic copies of field reports, photos, correspondences, and sample results are available upon request.
- Special requests regarding field oversight, research, and presentations are welcomed.
- Staff continue to attend and participate in the FUSRAP citizen Oversight Committee Meetings.

BIWEEKLY REGULATORS COORDINATION MEETINGS

The EPA, USACE, Mallinckrodt/Tyco and department personnel will continue to meet biweekly to coordinate the dissemination of information and discuss issues. The majority of the meeting is a presentation by the USACE of site status. Discussion content is addressed under the section titled *Comments Regarding Site Activities This Quarter*.

DEPARTMENT PROJECTS

Staff will continue to work on committees affiliated with Long-Term Stewardship and Groundwater.

FINANCIAL REPORTING

The department's Hazardous Waste Program submits a financial report separate from this document. The report includes costs incurred during the reporting period with request for reimbursement forms.

TRAINING, CONFERENCES, MEETINGS ATTENDED

- ASTSMO Federal Facilities Symposium (DS, 8/3)*
- Supervisor Liability, required training (LE, 8/24)*
- QA/QC Training, (DS, 8/30)*
- Meet the Media Training, required training (DS, 9/15)*
- Re-energizing During Difficult Times, required training (LE, 9/15)*
- Effective Interviewing, required class (EG, 9/20)
- CHMM National Conference, St. Louis (JW, 9/26)
- Federal Facilities Section Monthly Meetings*
- Monthly FUSRAP Citizens Oversight Committee Meetings
- Biweekly Regulators Coordination Meetings
- SLAPS Contractor Preparatory Meetings
- SLDS Coordination Meetings

* *Other sites participate in funding.*